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(54) **METHOD FOR IMPROVING IMMUNE SYSTEM FUNCTION BY ADMINISTERING AGENTS THAT INHIBIT DNA-DEPENDENT PROTEIN KINASE-DIRECTED APOPTOSIS**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

Methods and compositions for improving immune system function are provided. These methods find particular use in improving immune system function in individuals with a condition in which naïve lymphocytes comprise elevated amounts of DNA double strand breaks (DSB), for example, individuals with Rheumatoid Arthritis, individuals that have received a bone marrow transplant, or elderly individuals, e.g. individuals that are 50 or more years old. Also provided are methods and compositions for screening for novel compounds that will improve immune system function in such individuals.

14 Claims, 8 Drawing Sheets